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III. . *Prospect of the Weather, Winds, and Height of the Mercury in the Barometer, on the first day of the Month; and of the whole Rain in every Month of the Year 1703, and the beginning of 1704: Observed at Towneley in Lancashire, by Ri. Towneley, Esq; and at Upminster in Essex. By the Rev Mr W. Derham, F. R. S.*

Month.	Weather at <i>Towneley.</i>	Weather at <i>Upminster.</i>	Winds at <i>Towneley.</i>	Winds at <i>Upminster.</i>	Barometer at <i>Towneley.</i>	Barometer at <i>Upminster.</i>	Rain at <i>Towneley.</i>	Rain at <i>Upminster.</i>
<i>January.</i>	Overcast.	Overcast.	SE 5	SE 1	29 04 28 91 80	29 39 35 22	15 17	8
<i>February.</i>	Overcast.	Frost and Fair.	SSE 3	E 1 Clouds. S.	29 29 37 47 64	62 68 82	15 88	6
<i>March.</i>	Chequer'd.	Frost, and Fair. Snow.	WSW NE	NW 1	67 73 59 59 54	83 92 93 91 91	20 02	4
<i>April.</i>	Chequer'd and Cloudy.	Fair. Cloudy. Fair.	W	WSW 1 W 4	49 00 60 38	66 70 76 61	17 63	12
<i>May.</i>	Cloudy.	Cloudy. Thunder, with Hail & Rain.	NNE	NbW 3 NWbN 3	63 84 80 77	88 99 96 90	17 64	20
<i>June.</i>	Cloudy.	Cloudy. Clear.	S	S 0 S 1	75 63 84 80 77	75 88 99 96 90 90	24 06	14
<i>July.</i>	Cloudy.	Fair.	SSE. SE E 1	E 1 NbE 2	57 55 58 58 08 00 18	72 72 69 30 40 40	3 65	14
<i>August.</i>	Cloudy.	Thunder and Rain. Fairer.	SE 1 4 4	N 2 NbW 2 Clouds SE	57 55 58 58 08 00 18	72 72 69 30 40 40	14 21	3
<i>Septemb.</i>	Clear Chequer'd.	Cloudy. Fairer.	E	NW 1 WNW 1	28 76 83 86 51 52 36	87 30 08 72 69	32 40	14
<i>October.</i>	Chequer'd.	Fair.	N	NNW 4	29 56 51 52 36	29 72 69	7 04	9
<i>Novemb.</i>	Overcast.	Cloudy.	E	NbE 1	29 56 51 52 36	29 72 69	28 56	7

Prospekt of the Weather, Winds, and Height of the Mercury in the Barometer, on the first day of the Month; and of the whole Rain in every Month in the Year 1703, and the beginning of 1704: Observed at Towneley in Lancashire, by Ri. Towneley, Esq; and at Upminster in Essex. By the Reverend Mr W. Derham, F. R. S.

	Weather at <i>Towneley.</i>	Weather at <i>Upminster.</i>	Winds at <i>Towneley.</i>	Winds at <i>Upminster.</i>	Barometer at <i>Towneley.</i>	Barometer at <i>Upminster.</i>	Rain at <i>Towneley.</i>	Rain at <i>Upminster.</i>
			SE 5	SE 1	29 04	29 39		
ry.	Overcast.	Overcast.			28 91 80	35 22	15 17	8 89
ry.	Overcast.	Frost and Fair.	SSE 3	E 1	29 29	62		
				Clouds. S.	37		15 88	6 41
					47	68		
	Chequer'd.	Frost, and Fair.	WSW	NW 1	64	82		
		Snow.	NE		67	83	20 02	4 75
					73	92		
	Chequer'd	Fair.		WSW 1	59	93		
	and	Cloudy.	W	W 4	59	91	17 63	12 49
	Cloudy.	Fair.			54	91		
			NNE	NbW 3	49	66		
	Cloudy.	Cloudy. Thunder, with Hail & Rain.	NWbN 3		00	70	17 64	20 77
					60	76		
	Cloudy.	Cloudy.	S	S 0	38	61		
		Clear.		S 1	49	75	24 06	14 55
					63	88		
	Cloudy.	Fair.	SSE. SE	E 1	84	99		
			E 1	NbE 2	80	96	3 65	14 90
					77	90		
	Cloudy.	Thunder and Rain.	SE 1	N 2	57	72		
		Fairer.	4	NbyW 2	55	72	14 21	3 36
			4	Clouds SE	52	69		
	Clear	Cloudy.	E	NW 1	08	30		
bb.	Chequer'd.	Fairer.		WNW 1	00	40	32 40	14 86
					18	40		
			N	NNW 4	28 76	87		
r.	Chequer'd.	Fair.			83		7 04	9 55
					86	30 08		
			E	NbE 1	29 56	29 72	28 56	7 27
ub.	Overcast.	Cloudy.			51			
					52	69		
			W		36			

January.	Overcast.	Overcast.	SE 5	SE 1	29 04	29 39			
					28 91	35	15	17	8
					80	22			
February.	Overcast.	Frost and Fair.	SSE 3	E 1	29 29	62			
				Clouds. S.	37		15	88	6
					47	68			
March.	Chequer'd.	Frost, and Fair.	WSW	NW 1	64	82			
		Snow.	NE		67	83	20	02	4
					73	92			
April.	Chequer'd and Cloudy.	Fair. Cloudy. Fair.	W	WSW 1 W 4	59	93			
					59	91	17	63	12
					54	91			
May.	Cloudy.	Cloudy. Thunder, with Hail & Rain.	NNE	NbW 3 NWbN 3	49	66			
					00	70	17	64	20
					60	76			
June.	Cloudy.	Cloudy. Clear.	S	S 0 S 1	38	61			
					49	75	24	06	14
					63	88			
July.	Cloudy.	Fair.	SSE. SE	E 1	84	99			
			E 1	NbE 2	80	96	3	65	14
					77	90			
August.	Cloudy.	Thunder and Rain. Fairer.	SE 1	N 2	57	72			
			4	NbyW 2	55	72	14	21	3
			4	Clouds SE	52	69			
Septemb.	Clear	Cloudy. Fairer.	E	NW 1	08	30			
	Chequer'd.			WNW 1	00	40	32	40	14
					18	40			
October.	Chequer'd.	Fair.	N	NNW 4	28 76	87			
					83		7	04	9
					86	30 08			
November.	Overcast.	Cloudy.	E	NbE 1	29 56	29 72	28	56	7
					51				
					52	69			
December.	Overcast	Overcast.	W		36				
	Cloudy.	Rain.	3		45		10	24	2
					48	81	196	60	119
January.	Overcast.	Overcast.	SSE	E 0	80	30 07	31	39	4
			SE 2	SEbE 1	82	10			
					85	10			
February.	Overcast.	Misling. Cloudy.	W	NWbN 1	90	23	5	93	2
					02	26			
					02	26			
March.	Overcast.	Overcast. Fairer.	S	SEbE 0 SE 1	29 11	29 58	20	78	16
						45			
						40			
April.	Cloudy and Chequer'd	Rain with Hail. Fair.	W 4 NW 7	SbW 4 Clouds SW by W	28 72 94 07	17 18 38			

ry.	Overcast.	Overcast.	SE 5	SE 1	29 04	29 39				
					28 91	35 15	17	8	89	
					80	22				
ry.	Overcast.	Frost and Fair.	SSE 3	E 1	29 29	62				
				Clouds. S.	37		15	88	6	41
					47	68				
	Chequer'd.	Frost, and Fair.	WSW	NW 1	64	82				
		Snow.	NE		67	83	20	02	4	75
					73	92				
	Chequer'd	Fair.		WSW 1	59	93				
	and	Cloudy.	W	W 4	59	91	17	63	12	49
	Cloudy.	Fair.			54	91				
			NNE	NbW 3	49	66				
	Cloudy.	Cloudy.		NWbN 3	00	70	17	64	20	77
		Thunder, with Hail & Rain.			60	76				
			S	S 0	38	61				
	Cloudy.	Cloudy.		S 1	49	75	24	06	14	55
		Clear.			63	88				
			SSE. SE	E 1	84	99				
	Cloudy.	Fair.	E 1	NbE 2	80	96	3	65	14	90
					77	90				
			SE 1	N 2	57	72				
	Cloudy.	Thunder and Rain.	4	NbyW 2	55	72	14	21	3	36
		Fairer.	4	Clouds SE	58	69				
			E	NW 1	08	30				
rb.	Clear	Cloudy.		WNW 1	00	40	32	40	14	86
	Chequer'd.	Fairer.			18	40				
			N	NNW 4	28 76	87				
r.	Chequer'd.	Fair.			83		7	04	9	55
					86	30 08				
			E	NbE 1	29 56	29 72	28	56	7	27
ub.	Overcast.	Cloudy.			51	69				
					52					
			W		36					
	Overcast	Overcast.			45		10	24	2	14
b.	Cloudy.	Rain.	3		48	81	196	60	119	94
					80	30 07	31	39	4	06
ry.	Overcast.	Overcast.	SSE	E 0						
			SE 2	SEbE 1	82	10				
					85	10				
			W	NWbN 1	90	23	5	93	2	19
ry.	Overcast.	Misting.			02	26				
		Cloudy.			02	26				
			S	SEbE 0	29 11	29 58	20	78	16	04
	Overcast.	Overcast.		SE 1		45				
		Fairer.				40				
			W 4	SbW 4	28 72	17				
	Cloudy	Rain with	NW 7	Clouds	94	18				
	and	Hail.		SW by W	07	38				
	Chequer'd	Fair.								

This

This Illustrious Society having been pleased to accept of Mr *Townley's* and my Observations compared, concerning the height of the Mercury, &c. for divers years, to the year 1702, which were published in the Transactions; it may not, I hope, be unacceptable to continue these Observations as far as Mr *Towneley* hath gone with them, till his Removal from *Towneley*.

And having room, I have added his Observations also of the Weather and Winds on the first day of every month, together with my own at the same time, extracted out of my larger Tables, now in the Society's custody. From whence these things may be observed.

1. That (as I have often observed in some other Papers) there is every year much more Rain falleth at *Towneley* than *Upminster*.

By the assistance of an Ingenious Learned Member of this Society, I have an Extract of the Rain at *Paris* and *Lisle*, as far as the *French* have published their Observations. And by comparing the Rain of one place with that of another, I find that there is about twice as much Rain falleth at *Townley*, as doth either at *Upminster*, *Paris*, or *Lisle*. Mr *Towneley* hath formerly observed in one of the Transactions, that as much more Rain falleth at *Townley* as *Paris*. And Mr *de la Hire* observes, that more Rain falleth at *Lisle* than *Paris*. But *Towneley* doth far exceed, as hath been said, and will appear by particulars.

At *Lisle*, one year with another, the Depth of the Rains amount to 22 inches 3 lines, *Paris* measure, or 23 in. 3l. which make about $23\frac{1}{2}$ inches *English*, or $24\frac{1}{2}$. At *Paris*, one year with another, they amount to 20 inches $3\frac{1}{2}$ lines *Paris* measure, which is near 22 inches *English*. But at *Towneley*, one year with another, according to Mr *Towneley's* computation formerly, the Rains amount to above 41 inches depth. And by taking eight other years, in which the Rain was observed both at
Towneley

(1880)

Towneley and *Upminster* (*viz.* from 1696 to 1704.) I and that all the 8 years Rain at *Towneley* amounteth to above 1700 *l.* Troy, at *Upminster* 823 *l.* only. Which said summs being divided by 8, give 212 $l. \frac{1}{2}$, one year with another, at *Towneley*, and near 103 *l.* at *Upminster*. Each of which summs being doubled, and making a Decimal Fraction of the last Figure, doth nearly give the number of inches, which all the Rain would have risen to, if the Earth had not swallowed it up, *viz.* 42 $\frac{1}{2}$ inches at *Towneley*, and about 20 $\frac{1}{2}$ inches at *Upminster*. Wherefore the Rain at *Upminster* is less than at *Paris*, at *Paris* than at *Lisle*, and at every one of the places less than at *Towneley* by much. The reason of which vast surmount at *Towneley*, is doubtless from the height of the Hills thereabouts, which retard or stop the Westerly Clouds: From which Point the Winds blow more than any other here in *England*. But

2. Notwithstanding the great disproportion of Rain between one place and another, yet there is a great agreement between our Barometers; one Rising or Falling when the other doth; and that much, or little, as the other doth, although not always exactly in the same proportion.

And this is what I find Monsieur *Maroldi* hath observed, by comparing his Observations at *Paris* with mine at *Upminster*, in the years 1697 and 1698. Only at *Paris* the \varnothing is commonly 3 or 4 lines lower than at *Upminster*. And so it appears to be at *Towneley*, from this and some other Tables, *viz.* 3 or 4 tenths of an inch lower at *Towneley* than at *Upminster*. Which is an argument that *Towneley* and *Paris* are situated higher above the surface of the Sea than *Upminster* (which is nearly in the same level with *London*) is.

3. Another thing shewn by the foregoing Table is, That there is some agreement between the Winds at *Towneley* and *Upminster*. Which although not always exactly

exactly in the same Point, yet do often tend the same way, blowing within a Point or two perhaps of the same course; especially when the Wind is somewhat strong. Or if the Winds have differed, yet the Scudd (as the Seamen call the current of the Clouds) hath commonly shown the motion of the upper Air to agree thereto.

This I say doth often happen, though not always. And this also Monsieur *Maraldi* hath observed at *Paris* in the aforesaid years, viz. "That there are a great many days, during the different Seasons of the year, where the Winds are the same in both Places, [i. e. *Paris* and *Upminster*.] When the Wind was the same, both in one part and the other, it was ordinarily pretty strong, and of long continuance. And also he observed that the Winds had changed alike in both Places. *Vid. Hist. de l' Acad. Roy. des Sciences An. 1699.*
